Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-78. (canceled)

79. (currently amended) A method comprising:

storing search query-search document associations in a database, each search query-search document association representing a one-to-one pairing of an issued search query and a search document;

receiving a search query;

~~obtaining~~ identifying a set of search result documents using the received search query; and

formulating a search query refinement suggestion based on at least one of the search result ~~document~~ documents and at least one search query-search document association in the database.

80. (currently amended) The method of claim 79, wherein the formulating the search query refinement suggestion comprises:

~~comparing the at least one search result document to the search documents in the search query-search document associations;~~

identifying search documents of the search query – search document association that match the at least one search result document within the database; and

using the issued search queries associated with the identified search documents in the formulating.

81. (previously presented) The method of claim 80, further comprising:

assigning weights to the search query-search document associations in the database based on relevancies of the search documents to the issued search queries in the search query-search document associations; and

storing the weights in the database.

82. (previously presented) The method of claim 81, wherein the formulating the search query refinement suggestion further comprises:

computing term vectors using terms in the issued search queries of the search query-search document associations and the assigned weights.

83. (previously presented) The method of claim 82, wherein the formulating the search query refinement suggestion further comprises:

normalizing the term vectors; and

forming clusters of the identified search documents based on distances of each of the normalized term vectors from a common origin.

84. (previously presented) The method of claim 83, wherein the formulating the search query refinement suggestion further comprises:

multiplying, by a constant, those of the normalized term vectors that include

constituent terms with the received search query to downwardly weight the constituent

terms to produce an independence of the clusters from the terms of the received search

query.

85. (previously presented) The method of claim 83, further comprising:

assigning a relevance score to the at least one search result document,

wherein the formulating the search query refinement suggestion further

includes:

ranking the clusters based on the relevance score and a number of identified

search documents in the clusters.

86. (previously presented) The method of claim 85, wherein the formulating the

search query refinement suggestion further comprises:

selecting ones of the clusters based on the ranking.

87. (previously presented) The method of claim 86, wherein the formulating the

search query refinement suggestion further comprises:

computing a centroid for each of the selected clusters; and

determining a score for each unique search query in the selected clusters based on

the centroids.

88. (previously presented) The method of claim 87, wherein the computing the score for each of the unique search queries comprises:

multiplying a frequency of the issued search queries in the search query-search document associations in the selected clusters times a length of a distance vector measured from the term vectors of the issued search queries in the search query-search document associations to the centroids of the selected clusters.

89. (previously presented) The method of claim 87, wherein the formulating the search query refinement suggestion further comprises:

designating a name to each of the selected clusters based on the computed scores of the unique search queries of the selected clusters.

90. (previously presented) The method of claim 89, wherein the formulating the search query refinement suggestion further comprises:

comparing the computed scores of the unique search queries of the named clusters to a threshold; and

selecting those cluster names that exceed the threshold to obtain the search query refinement suggestions.

91. (previously presented) The method of claim 90, wherein the formulating the search query refinement suggestion further comprises:

sorting the obtained search query refinement suggestions based on a relevance score assigned to each of the search result documents corresponding to the identified

search documents associated with the named clusters and a number of the identified

search documents in the named clusters.

92. (previously presented) The method of claim 91, further comprising:

presenting the sorted search query refinement suggestions to a user.

93. (previously presented) The method of claim 91, further comprising:

augmenting the sorted set of search query refinement suggestions with

supplemental queries that include one or more of the terms of the search query and

negated forms of all terms appearing in the set of search query refinement suggestions,

but not appearing in the search query; and

presenting the augmented search query refinement suggestions to a user.

94. (currently amended) A system comprising:

means for storing search query-search document associations in a database, each

search query-search document association representing a one-to-one pairing of a stored

search query and a search document;

means for receiving a search query;

means for ~~obtaining~~ identifying a set of search result documents using the

received search query; and

means for formulating a search query refinement suggestion based on at least one

of the search result ~~document~~ documents and at least one search query-search document

association in the database relating to the at least one search result document.

95. (currently amended) A computer-readable medium configured to store instructions executable by at least one processor to cause the at least one processor to:

store search query-search document associations, each search query-search document association representing a one-to-one pairing of an issued search query and a search document;

receive a search query;

~~obtain~~ identify a set of search result documents using the received search query; and

formulate a search query refinement suggestion based on at least one of the search result ~~document~~ documents and at least one search query-search document association of the stored search query-search document associations.

96. (currently amended) A method comprising:

storing a plurality of query-document associations, each query-document association including a one-to-one pairing of an issued search query and a stored search document;

receiving a search query;

~~obtaining~~ identifying a set of search result documents using the received search query;

~~comparing the~~ identifying search result documents ~~to~~ in the identified set of search result documents that match stored search documents;

identifying, for each ~~of the~~ stored search ~~document~~ documents that matches [[a]] one of the search result ~~document~~ documents, a query-document association in the plurality of query-document associations; and

formulating a search query refinement suggestion for the received search query based on the identified query-document associations for each of the stored search ~~document~~ documents that matches [[a]] one of the search result ~~document~~ documents.

97. (previously presented) The method of claim 96, wherein the formulating the search query refinement suggestion comprises:

using the issued search queries associated with the identified query-document associations in the formulating.

98. (previously presented) The method of claim 97, further comprising:

assigning weights to the stored query-document associations based on relevancies of the search documents to the issued search queries in the query-document associations; and

storing the assigned weights.

99. (previously presented) The method of claim 98, wherein the formulating the search query refinement suggestion further comprises:

computing term vectors using terms in the issued search queries of the identified query-document associations and the assigned weights.

100. (previously presented) The method of claim 99, wherein the formulating the search query refinement suggestion further comprises:

normalizing the term vectors; and

forming clusters of the search documents in the identified query-document associations based on distances of each of the normalized term vectors from a common origin.

101. (previously presented) The method of claim 100, wherein the formulating the search query refinement suggestion further comprises:

multiplying, by a constant, those of the normalized term vectors that include constituent terms with the received search query to downwardly weight the constituent terms to produce an independence of the clusters from the terms of the received search query.

102. (previously presented) The method of claim 100, further comprising:

assigning a relevance score to the search result documents,

wherein the formulating the search query refinement suggestion further includes:

ranking the clusters based on the relevance score and a number of search documents in the clusters.

103. (previously presented) The method of claim 102, wherein the formulating the search query refinement suggestion further comprises:

selecting ones of the clusters based on the ranking.

104. (previously presented) The method of claim 103, wherein the formulating the search query refinement suggestion further comprises:

computing a centroid for each of the selected clusters; and

determining a score for each unique search query in the selected clusters based on the centroids.

105. (previously presented) The method of claim 104, wherein the computing the score for each of the unique search queries comprises:

multiplying a frequency of the issued search queries in the identified query-document associations in the selected clusters times a length of a distance vector measured from the term vectors of the issued search queries in the identified query-document associations to the centroids of the selected clusters.

106. (previously presented) The method of claim 104, wherein the formulating the search query refinement suggestion further comprises:

designating a name to each of the selected clusters based on the computed scores of the unique search queries of the selected clusters.

107. (previously presented) The method of claim 106, wherein the formulating the search query refinement suggestion further comprises:

comparing the computed scores of the unique search queries of the named clusters

to a threshold; and

selecting those cluster names that exceed the threshold to obtain the search query

refinement suggestions.

108. (previously presented) The method of claim 107, wherein the formulating

the search query refinement suggestion further comprises:

sorting the obtained search query refinement suggestions based on a relevance

score assigned to each of the search result documents corresponding to the search

documents in the query-document associations associated with the named clusters and a

number of the search documents in the named clusters.

109. (previously presented) The method of claim 108, further comprising:

presenting the sorted search query refinement suggestions to a user.

110. (previously presented) The method of claim 108, further comprising:

augmenting the sorted search query refinement suggestions with supplemental

queries that include one or more of the terms of the search query and negated forms of all

terms appearing in the set of search query refinement suggestions, but not appearing in

the search query; and

presenting the augmented search query refinement suggestions to a user.

111. (currently amended) A system comprising:

means for storing a plurality of query-document associations, each query-document association including a one-to-one pairing of a search query and a search document;

means for receiving a search query;

means for ~~obtaining~~ identifying a set of search result documents using the received search query;

means for ~~comparing the~~ identifying search result documents ~~to~~ in the identified set of search result documents that match one or more of the stored search documents;

means for identifying, for each of the stored search ~~document~~ documents that matches [[a]] one of the identified search result ~~document~~ documents, a query-document association [[in]] of the plurality of query-document associations; and

means for formulating a search query refinement suggestion for the received search query based on the identified query-document associations.

112. (previously presented) A method comprising:

creating a query source reference, including:

identifying associations between issued search queries and retrieved search documents in a one-to-one relation, and

assigning a weight to each of the associations;

receiving a search query; and

formulating a refinement suggestion for the received search query using the query source reference.

113. (previously presented) The method of claim 112, further comprising:

obtaining at least one search result document using the received search query,

wherein the formulating the search query refinement suggestion further comprises:

comparing the at least one search result document to the retrieved search documents,

identifying the retrieved search documents that match the at least one search result document, and

using the issued search queries associated with the identified search documents in the formulating.

114. (previously presented) The method of claim 113, wherein the formulating the search query refinement suggestion further comprises:

computing term vectors using terms in the issued search queries associated with the identified search documents and the assigned weights.

115. (previously presented) The method of claim 112, wherein the formulating the search query refinement suggestion further comprises:

ranking the search query refinement suggestion based on the computed term vectors,

wherein the method further comprises:

presenting the ranked search query refinement suggestion to a user.

116. (previously presented) A system comprising:

means for creating a query source reference, including:

means for identifying associations between issued search queries and retrieved search documents in a one-to-one relation, and

means for assigning a weight to each of the associations;

means for receiving a search query; and

means for formulating a refinement suggestion for the received search query using the query source reference.

117. (previously presented) A computer-readable medium configured to store instructions executable by at least one processor to cause the at least one processor to:

create a query source reference, including:

identifying associations between issued search queries and retrieved search documents in a one-to-one relation, and

assigning a weight to each of the associations;

receive a search query; and

formulate a refinement suggestion for the received search query using the query source reference.